PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 12349WO /mz	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP 03/08663	International filing date *(day/month/year)* 05.08.2003	Priority date *(day/month/year)* 07.08.2002
International Patent Classification (IPC) or both national classification and IPC H04L12/56		
Applicant INFINEON TECHNOLOGIES AG		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

   ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

   I ☒ Basis of the opinion
   II ☐ Priority
   III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   IV ☐ Lack of unity of invention
   V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   VI ☐ Certain documents cited
   VII ☐ Certain defects in the international application
   VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
19.01.2004	16.11.2004
Name and mailing address of the international preliminary examining authority: European Patent Office - Gitschiner Str. 103 D-10958 Berlin Tel. +49 30 25901 - 0 Fax: +49 30 25901 - 840	Authorized Officer Tous Fajardo, J Telephone No. +49 30 25901-489

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP 03/08663

I. Basis of the report

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*:

Description, Pages

1-15 as originally filed

Claims, Numbers

1-17 as originally filed

Drawings, Sheets

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

   These elements were available or furnished to this Authority in the following language: , which is:

   ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).

   ☐ the language of publication of the international application (under Rule 48.3(b)).

   ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

   ☐ contained in the international application in written form.

   ☐ filed together with the international application in computer readable form.

   ☐ furnished subsequently to this Authority in written form.

   ☐ furnished subsequently to this Authority in computer readable form.

   ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

   ☐ the description, pages:

   ☐ the claims, Nos.:

   ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

   (Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	8,11
	No:	Claims	1-7,9,10,12-15,17
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-17
Industrial applicability (IA)	Yes:	Claims	1-17
	No:	Claims	

2. Citations and explanations

   see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1) Reference is made to the following document:

D1: US-A-5 842 224 (FENNER PETER R) 24 November 1998 (1998-11-24)

2) The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1-7, 9, 10, 12-15 and 17 is not new in the sense of Article 33(2) PCT.

2.1) The document D1 discloses (the references in parentheses applying to this document)
- a method for routing data packets (see column 17, lines 6-11) comprising the steps:
  a) extracting a destination address identifier from a data packet to be forwarded (see column 16, lines 23-24)
  b) comparing the destination address identifier with entries of a routing table, each entry corresponding to a forwarding address available for routing (see column 16, lines 23-25), and
  c) if a correspondence between the destination address identifier and one of the forwarding addresses stored in the routing table is found in step b), switching the data packet to an output link associated with the respective forwarding address matching the destination address identifier (column 16, lines 23-25), where
  before carrying out said step b), the extracted destination address identifier is compressed according to a data compression algorithm (see column 17, line 66 - column 18, line 1), and the forwarding addresses are compressed according to the same data compression algorithm and stored in the routing table (see column 17, lines 40-58; figure 4, reference 130; and column 26, lines 4-7, 16-18), and
  in said step b), the compressed address destination address identifier is compared with the compressed forwarding addresses stored in the routing table (see column 18, lines 5-7) **[claim 1]**
- that the data compression algorithm is a lossless data compression algorithm which eliminates redundancy in the destination address identifier and the forwarding addresses, respectively, without losing any information content (see column 17, lines 40-58) **[claim 2]**

- that the data compression algorithm is an Arithmetic one (see column 17, line 40) **[claim 3]**
- that at least one parameter of the data compression algorithm is adjusted in dependence upon data characteristics of the destination address identifier (see column 17, lines 44-58) **[claim 4]**
- that the forwarding address matching the destination address identifier is determined taking into account a similarity between the destination address identifier and a destination address identifier of a preceding data packet (see column 25, lines 25-30) **[claim 5]**
- that the data compression algorithm uses a code table which assigns a code word to a symbol of the destination address identifier and a symbol of each forwarding address, respectively (see column 4, line 62 and column 5, lines 5-9) **[claim 6]**
- that each symbol of the destination address identifier and each symbol of a forwarding address, respectively, comprises a plurality of bits of the destination address identifier and a plurality of bits of the forwarding address, respectively (see column 17, lines 44-45 and 50-54) **[claim 7]**
- that the data compression algorithm is such that it assigns a code word to each symbol of the destination address identifier and to each symbol of the forwarding addresses, respectively, the length of which being inversely proportional to the appearance probability of the symbol in a given address table (see column 17, lines 55-58) **[claim 9]**
- that the data compression algorithm is such that it assigns the code word to each symbol of the destination address identifier and of the forwarding address, respectively, depending on the appearance probability of the respective symbol in the destination address identifier of an input data packet (see column 17, lines 55-58) **[claim 10]**

The subject-matter of claims 1-7, 9 and 10 is therefore not new (Article 33(2) PCT).

2.2) Apparatus **claims 12-15** correspond to method claims 1-4, respectively. Apparatus **claim 17** corresponds to method claim 1. Moreover, D1 also discloses an apparatus for implementing the method of claims 1-4. Therefore, the subject-matter of claims 12-15 and 17 is not new (Article 33(2) PCT).

3) The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 8 and 11 does not involve an inventive step in the sense of Article 33(3) PCT.

3.1) Document D1, which is considered to represent the most relevant state of the art, discloses (cf. paragraph 2.1) a method from which the subject-matter of **claim 8** differs in that each symbol of the destination address identifier and each symbol of the forwarding address comprises four successive bits of the destination address identifier and the forwarding address, respectively. D1 discloses that these symbols comprise eight bits. The choice of four bits is merely one of several straightforward possibilities from which the skilled person would select, in accordance with circumstances, without the exercise of inventive skill (see also D1, column 18, lines 23-32).

3.2) Document D1, which is considered to represent the most relevant state of the art, discloses (cf. paragraph 3.1) a method from which the subject-matter of **claim 11** differs in that it is used for the routing of IPv6 data packets. This feature is merely one of several straightforward possibilities from which the skilled person would select, in accordance with circumstances, without the exercise of inventive skill, in order to choose a network protocol.

4) Claim 16 does not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not defined. The claim attempts to define the subject-matter in terms of the result to be achieved. This claim mentions a means (a feedback connection between the routing unit and the first address compression means) and a result to be achieved (eliminating redundancy in the time domain), but there is no connection between them. Moreover, the term "eliminating redundancy in the time domain" has no clear meaning: it is not clear what is redundant and how to eliminate the redundancy.